ATTACHMENT 3

Early Site Permit
Scope and Associated Review Criteria for Environmental Report
Primary Source of Review Guidance: NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants" (1999)

INTRODUCTION

During the development of the Environmental Standard Review Plan (ESRP) (NUREG-1555, issued March 2000), the NRC staff ensured that the ESRP provided guidance for conducting the environmental review of several different licensing actions in a thorough and disciplined manner. These licensing actions include limited work authorizations, construction permits, operating licenses, combined licenses (COLs), and early site permits (ESPs).

In October 2002, the NRC staff conducted an internal ESRP workshop to review the completeness of the ESRP and determine whether it was up-to-date, identify how to use it during the staff's review of the expected ESP applications, and consider the implications to its review of an ESP application employing the plant parameter envelope (PPE) approach[1] instead of a specific nuclear power plant design. At the end of the workshop, the staff concluded that

- The ESRP is sufficiently up-to-date to support the review of the ESP applications.
- It is unnecessary to segregate portions of the ESRP guidance specifically for ESP reviews.
- Certain areas of the ESRP should be clarified.
- The PPE approach can serve as the foundation for an environmental report (ER).
- The robustness of the environmental impact statement (EIS) will depend on the level of detail and analyses provided in the application

This attachment to RS-002 provides guidance to staff reviewers to help ensure that review of any ESP application (PPE-based or otherwise) would be conducted using updated guidance where appropriate.

The ESP application should include sufficient information for the staff to determine what the environmental impacts of constructing and operating nuclear power plant(s) could be. For an ESP application employing the PPE approach, site characteristics, PPE values, and analyses will comprise the ESP bases that will be the focus for comparison during a COL review with the

[1]For an ESP application that employs the PPE approach, the applicant's assessment of the environmental impacts of constructing and operating a nuclear plant(s) will not be based on a specific design. Rather, PPE values will be provided as a surrogate for the design information identified in the ESRP. These PPE values will provide bounding design parameter information for a range of reactor designs, instead of for only one design.

design of the actual plant to be constructed on the site. Site-specific parameters (such as meteorology, demographics, and hydrology) should be provided in any ESP application. However, detailed design information pertaining to structures, systems, and components called for in the ESRP need not be submitted by the applicant in an ESP application employing the PPE approach. If PPE values are used as a surrogate for design-specific values, the ESP applicant need not provide a one-to-one replacement for the design-specific values, but should provide sufficient information for the staff to develop a reasonable independent assessment of potential impacts to specific environmental resources. The design-specific information called for in the ESRP may not exist for applicants using the PPE approach, so the NRC review staff should use their experience and judgment accordingly.

PPE values do not reflect a specific design and are not to be reviewed by the NRC staff for correctness. However, the NRC staff must determine (1) whether the application is sufficient to enable the NRC staff to conduct its required environmental review, and (2) whether the PPE values are not unreasonable for consideration by the staff when making its findings in accordance with Subpart A of 10 CFR Part 52. The staff should use its judgment to determine whether sufficient information has been provided by the applicant in order for the staff to perform its independent assessment of the environmental impacts of constructing and operating nuclear power plant(s). If a reasonable estimate of the impact to a resource cannot be evaluated from the information provided in the environmental report, then the staff may request additional information so that a reasonable estimate can be made.

The ESRP and this attachment to RS-002 provide guidance to NRC staff reviewers to help ensure a thorough, consistent, and disciplined review of any ESP application. The staff's June 23, 2003 responses to comments received on draft RS-002 (ML031710698) provide additional insights on the staff's expectations and potential approach to the review of an application employing the PPE approach. During the review of a COL application referencing an ESP, the staff will assess the environmental impacts of the construction and operation of a specific plant design. If the environmental impacts addressed in the EIS written at the ESP stage are found to be bounding by the staff, no additional analysis of these impacts is required, even if the ESP applicant employed the PPE approach. However, environmental impacts not considered or not bounded at the ESP stage should be assessed at the COL stage. In addition, measures and controls to limit adverse impacts should be identified and evaluated for feasibility and adequacy in limiting adverse impacts at the ESP stage, where possible, and at the COL stage. As a result of the staff's environmental review of the ESP application, the staff may determine that conditions or limitations on the ESP may be necessary in specific areas, as set forth in 10 CFR 52.24. Therefore, the staff should identify in the EIS when and how assumptions and bounding values limit its conclusions on the environmental impacts to a particular resource.

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Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Primary Review Branch: RLEP				
Introduction to the Environmental Impact Statement	RLEP	None	1.0	
The Proposed Project	RLEP	None	1.1	
Status of Reviews, Approvals, and Consultations	RLEP	None	1.2	
Environmental Description	RLEP	SPSB	2.0	
Station Location	RLEP	SPSB	2.1	
Land	RLEP	SPSB	2.2	
The Site and Vicinity	RLEP	SPSB	2.2.1	
Transmission Corridors and Offsite Areas	RLEP	None	2.2.2	
The Region	RLEP	SPSB	2.2.3	
Water	RLEP	EMEB	2.3	
Hydrology	RLEP	EMEB	2.3.1	Also consider requirements of Section 404 of the Clean Water Act.
Water Use	RLEP	EMEB	2.3.2	Also consider requirements of Section 404 of the Clean Water Act.
Water Quality	RLEP	EMEB	2.3.3	

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Ecology	RLEP	None	2.4	
Terrestrial Ecology	RLEP	None	2.4.1	
Aquatic Ecology	RLEP	None	2.4.2	
Socioeconomics	RLEP	SPSB	2.5	
Demography	RLEP	SPSB	2.5.1	For ESP purposes, ignore references to 10 CFR 100.10(b); instead use 10 CFR 100.20(a).
Community Characteristics	RLEP	None	2.5.2	
Historic Properties	RLEP	None	2.5.3	36 CFR 800.8 of the revised National Historic Preservation Act (NHPA) strengthened need for early identification and contact with tribes, the State Historic Preservation Officer and others. To reflect this revision, consider the following additional guidance in conjunction with the review procedures in this section: "Initiate early consultation with any Indian tribe that may attach religious and cultural significance to resources or properties that may be affected by an undertaking."
Environmental Justice	RLEP	SPSB	2.5.4	Office Letter 906 is now Office Instruction LIC-203. For ESP purposes, ignore references to 10 CFR 100.10; instead use 10 CFR 100.20 and 10 CFR 100.21.
Geology	RLEP	EMEB	2.6	
Meteorology and Air Quality	RLEP	SPSB	2.7	
Related Federal Project Activities	RLEP	None	2.8	
Plant Description	RLEP	None	3.0	

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
External Appearance and Plant Layout	RLEP	None	3.1	
Reactor Power Conversion System	RLEP	None	3.2	
Plant Water Use	RLEP	EMEB	3.3	
Water Consumption	RLEP	EMEB	3.3.1	
Water Treatment	RLEP	None	3.3.2	
Cooling System	RLEP	None	3.4	
Description and Operational Modes	RLEP	None	3.4.1	
Component Descriptions	RLEP	None	3.4.2	
Radioactive Waste Management System	RLEP	IPSB	3.5	Defer to COL stage unless specific plant design is given.
Nonradioactive Waste Systems	RLEP	None	3.6	
Effluents Containing Chemicals or Biocides	RLEP	None	3.6.1	
Sanitary System Effluents	RLEP	None	3.6.2	
Other Effluents	RLEP	None	3.6.3	Address Solid Waste Disposal Act of 1965.
Power Transmission Systems	RLEP	None	3.7	
Transportation of Radioactive Materials	RLEP	IPSB	3.8	See NRC letter dated July 21, 2003 (ML031540694) for additional guidance concerning evaluation of impacts of transportation of radioactive materials.
Environmental Impacts of Construction	RLEP	None	4.0	
Land Use Impacts	RLEP	SPSB	4.1	

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
The Site and Vicinity	RLEP	SPSB	4.1.1	Includes review criteria for review of redress plan (if submitted). See NRC letter dated January 16, 2003 (ML023510553) for additional guidance concerning review of redress plans.
Transmission Corridors and Offsite Areas	RLEP	None	4.1.2	Includes review criteria for review of redress plan (if submitted). See NRC letter dated January 16, 2003 (ML023510553) for additional guidance concerning review of redress plans.
Historic Properties	RLEP	None	4.1.3	
Water-Related Impacts	RLEP	EMEB	4.2	
Hydrologic Alterations	RLEP	EMEB	4.2.1	
Water Use Impacts	RLEP	EMEB	4.2.2	
Ecological Impacts	RLEP	None	4.3	
Terrestrial Ecosystems	RLEP	None	4.3.1	- Section III(2)(a), Page 4.3.1-7, top of page, address the following additional bullets- (1) “the cumulative impacts of construction on terrestrial resources,” (2) “effects of dust on “important” species,” (3) “migration/nesting,” and (4) “nuisance species.” -Page 4.3.1-7, 4th bullet, “vertebrates” should be read as “animals.” -Page 4.3.1-7, last bullet under item (b),“good practice” should be read as “best management practices.”

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Aquatic Ecosystems	RLEP	None	4.3.2	-Page 4.3.2-7, item (b) should be clarified by including “or critical habitat” after “endangered species” and before “evaluating.” -Page 4.3.2-9, address additional issue: “Examine cumulative impacts of construction activities on aquatic resources.” Page 4.3.2-10, address additional item: “Evaluate nuisance species” as part of the bulleted list right before “evaluation findings.”
Socioeconomic Impacts	RLEP	SPSB	4.4	
Physical Impacts	RLEP	None	4.4.1	
Social and Economic Impacts	RLEP	SPSB	4.4.2	
Environmental Justice Impacts	RLEP	SPSB	4.4.3	Office Letter 906 is now Office Instruction LIC-203.
Measures and Controls to Limit Adverse Impacts during Construction	RLEP	None	4.6	
Environmental Impacts of Station Operation	RLEP	None	5.0	
Land Use Impacts	RLEP	SPSB	5.1	
The Site and Vicinity	RLEP	SPSB	5.1.1	
Transmission Corridors and Offsite Areas	RLEP	None	5.1.2	
Historic Properties	RLEP	None	5.1.3	
Water-Related Impacts	RLEP	EMEB	5.2	
Hydrologic Alterations and Plant Water Supply	RLEP	EMEB	5.2.1	
Water Use Impacts	RLEP	EMEB	5.2.2	
Cooling System Impacts	RLEP	None	5.3	

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Intake System	RLEP	None	5.3.1	
Hydrodynamic Descriptions and Physical Impacts	RLEP	EMEB	5.3.1.1	Need to address scouring, dredging, turbidity and silt buildup issues. Include consideration of new Environmental Protection Agency (EPA) requirements for intake structures (40 CFR Part 9, §122 through 125 - 66 FR 65256, December 18, 2001).
Aquatic Ecosystems	RLEP	None	5.3.1.2	Page 5.3.1.2-3, "Acceptance Criteria", first line- "construction" should be read as "operational"; address 40 CFR Part 9, §122 through 125 - 66 FR 65256, December 18, 2001 with respect to the design requirements of intake structures. -Page 5.3.1.2-5, item in Section III(1) starting with "Determine whether" should be read as "Determine whether the applicant is in compliance with NPDES-regulations addressing cooling water intake structures for new facilities." -Page 5.3.1.2-6, under item (3)"HIGH, MEDIUM, or LOW" should be read as "LARGE, MODERATE or SMALL." -Page 5.3.1.2-7, the first bullet should be read as "Assess mortality for all entrained biota, considering the following:" Ignore the first bullet under item (7). -Page 5.3.1.2-9, consider additional reference: 40 CFR Part 9, §122 through 125 - 66 FR 65256, December 18, 2001.
Discharge System	RLEP	None	5.3.2	
Thermal Description and Physical Impacts	RLEP	None	5.3.2.1	
Aquatic Ecosystems	RLEP	None	5.3.2.2	
Heat Discharge System	RLEP	None	5.3.3	

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Heat Dissipation to the Atmosphere	RLEP	SPSB	5.3.3.1	
Terrestrial Ecosystems	RLEP	None	5.3.3.2	-Page 5.3.3.2-2, under “Data and Information Needs,” also address “cooling tower design information for noise and aesthetics.” -Page 5.3.3.2-4, in the 4th paragraph, 3rd line, “cooling towers” should be read as “elevated structures.” -Page 5.3.3.2-5, also consider impacts to birds from cooling towers and their operation (elevated structures and elevated structure vision obstructed by vapor plume Page 5.3.3.2-6, 5th bullet, “minor” should be read as “small”; 6th bullet,“adverse” should be read as “moderate” in the first line of that bullet; 7th bullet, “adverse” should be read as “large” in the first line of that bullet.
Impacts to Man	RLEP	None	5.3.4	Analysis should include review of microorganisms from heating systems (thermophyllic microorganisms). This analysis can be conducted at the ESP stage with adequate information related to the cooling system (type of heat sink) but it will be important to look for new and significant information for issues like thermophyllic microorganisms at the COL stage.
Environmental Impacts of Waste	RLEP	None	5.5	
Nonradioactive Waste System Impacts	RLEP	None	5.5.1	
Mixed Waste Impacts	RLEP	IPSB	5.5.2	
Transmission System Impacts	RLEP	None	5.6	
Terrestrial Ecosystems	RLEP	None	5.6.1	

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Aquatic Ecosystems	RLEP	None	5.6.2	
Impacts to Man	RLEP	None	5.6.3	
Uranium Fuel Cycle Impacts	RLEP	None	5.7	See NRC letter dated July 21, 2003 (ML031540694) for additional guidance concerning evaluation of uranium fuel cycle impacts.
Socioeconomic Impacts	RLEP	SPSB	5.8	
Physical Impacts of Station Operation	RLEP	None	5.8.1	
Social and Economic Impacts of Station Operation	RLEP	SPSB	5.8.2	
Environmental Justice Impacts	RLEP	SPSB	5.8.3	
Decommissioning	RLEP	None	5.9	
Measures and Controls to Limit Adverse Impacts during Operation	RLEP	None	5.10	
Environmental Measurements and Monitoring Programs	RLEP	None	6.0	
Thermal Monitoring	RLEP	None	6.1	
Hydrological Monitoring	RLEP	EMEB	6.3	
Meteorological Monitoring	RLEP	SPSB	6.4	For ESP purposes, ignore references to 10 CFR 100.10(c)(2) and 10 CFR 100.11; instead use 10 CFR 100.20(c)(2) and 10 CFR 100.21.
Ecological Monitoring	RLEP	None	6.5	
Terrestrial Ecology and Land Use	RLEP	None	6.5.1	
Aquatic Ecology	RLEP	None	6.5.2	

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Chemical Monitoring	RLEP	None	6.6	
Summary of Monitoring Programs	RLEP	None	6.7	
Environmental Impacts of Postulated Accidents Involving Radioactive Materials	RLEP	SPSB	7.0	
Severe Accidents	RLEP	SPSB	7.2	See NRC letters dated Feb 12, 2003 (ML030280518) and June 25, 2003 (ML031430282) for additional guidance concerning severe accident impacts analysis.
Transportation Accidents	RLEP	None	7.4	See NRC letter dated July 21, 2003 (ML031540694) for additional guidance concerning evaluation of impacts of transportation of radioactive materials.
Need for Power	RLEP	None	8.0	Need not be included unless applicant seeks approval.
Description of Power System	RLEP	None	8.1	Need not be included unless applicant seeks approval.
Power Demand	RLEP	None	8.2	Need not be included unless applicant seeks approval.
Power and Energy Requirements	RLEP	None	8.2.1	Need not be included unless applicant seeks approval.
Factors Affecting Growth of Demand	RLEP	None	8.2.2	Need not be included unless applicant seeks approval.
Power Supply	RLEP	None	8.3	Need not be included unless applicant seeks approval.
Assessment of Need for Power	RLEP	None	8.4	Need not be included unless applicant seeks approval.

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Alternatives to the Proposed Action	RLEP	None	9.0	Includes unresolved conflicts concerning alternative uses of available resources. See 10 CFR 51.45(b)(3).
No-Action Alternatives	RLEP	None	9.1	In accordance with the requirements of 10 CFR 52.18 and 10 CFR 52.21, the portions of this section dealing with the need for power are applicable to the review of an ESP application only in those cases in which an applicant elects to include the information for consideration at the time of the ESP review.
Energy Alternatives	RLEP	None	9.2	In NRC letters dated June 2, 2003 (e.g., ML031480443), the staff informed potential applicants for an ESP that the Commission has determined that an ESP applicant need not include an assessment of alternative energy sources in its environmental report. Accordingly, this section is applicable to the review of an ESP application only in those cases in which an applicant elects to include the information for consideration at the time of the ESP application review.
Alternatives Not Requiring New Generating Capacity	RLEP	None	9.2.1	See comment for Section 9.2 above.
Alternatives Requiring New Generating Capacity	RLEP	None	9.2.2	See comment for Section 9.2 above. Should also include consideration of a combination of different alternatives.
Assessment of Alternative Energy Sources and Systems	RLEP	None	9.2.3	See comment for Section 9.2 above.
Alternative Sites	RLEP	None	9.3	See NRC letter dated March 7, 2003 (ML030520434) for additional guidance concerning reviews of alternative sites.

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Alternative Plant and Transmission Systems	RLEP	None	9.4	
Heat Dissipation Systems	RLEP	None	9.4.1	
Circulating Water Systems	RLEP	None	9.4.2	
Transmission Systems	RLEP	None	9.4.3	Environmental Justice should also be considered in evaluation.
Environmental Consequences of the Proposed Action	RLEP	None	10.0	
Unavoidable Adverse Environmental Impacts	RLEP	None	10.1	
Irreversible and Irretrievable Commitments of Resources	RLEP	None	10.2	
Relationship Between Short-Term Uses and Long-Term Productivity of the Human Environment	RLEP	None	10.3	
Benefit-Cost Balance	RLEP	None	10.4	Need not be included unless applicant seeks approval.
Benefits	RLEP	None	10.4.1	Need not be included unless applicant seeks approval.
Costs	RLEP	None	10.4.2	Need not be included unless applicant seeks approval.
Summary	RLEP	None	10.4.3	Need not be included unless applicant seeks approval.

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Primary Review Branch: IPSB				
Radiation Exposure to Construction Workers	IPSB	None	4.5	See Note 1. Also: references to 10 CFR 20.1205 should be changed to 10 CFR 20.1502. Footnote should be added after the term "construction worker" which states: "During the ESP stage, the term 'construction worker' also refers to all other personnel on the proposed site who may be performing surveys, taking measurements, clearing land, etc."
Radiological Impacts of Normal Operation	IPSB	RLEP	5.4	
Exposure Pathways	IPSB	RLEP	5.4.1	10 CFR Part 50 Appendix I is applicable at COL stage. If ER provides adequate information on dose receptors and pathways, analysis can be performed at ESP stage; otherwise, it will be deferred to COL stage.
Radiation doses to Members of the Public	IPSB	RLEP	5.4.2	
Impacts to Man	IPSB	RLEP	5.4.3	
Impacts to Biota other than Members of the Public	IPSB	RLEP	5.4.4	
Radiological Monitoring	IPSB	RLEP	6.2	If ER provides adequate information on dose receptors and pathways, analysis can be performed at ESP stage; otherwise, it will be deferred to COL stage.

Area of Review	Primary Review Branch	Secondary Review Branch	SRP Section	Comment/Additional Guidance
Primary Review Branch: SPSB				
Design Basis Accidents	SPSB	None	7.1	
Severe Accident Mitigation Design Alternatives	SPSB	None	7.3	Calls for detailed design information and design-specific probabilistic risk assessment. If not available in ESP application, review and staff findings on these sections will be deferred to COL stage.

Note 1: The following paragraphs address the radiation protection/dosimetry/site monitoring related responsibilities as they pertain to an ESP site.

Where a proposed ESP site is not adjacent to or near an existing operating reactor or materials facility and where it is apparent that no individual, in the course of employment related to a proposed ESP site, will exceed applicable exposure limits for members of the public, the ESP application need not address radiological assessment or protection for workers associated with the proposed site (or with construction of a reactor at that site).

If the proposed site is adjacent to or near an existing operating reactor or materials facility, the licensee (of the existing facility) is responsible for ensuring that the radiation dose to members of the public (including workers associated with the proposed site or any facility that might be constructed on the proposed site) will comply with the applicable requirements of 10 CFR Parts 19 and 20. The ESP applicant (existing facility licensee if this licensee is also the ESP applicant) will be responsible for providing, in the environmental report that supports the ESP application, the impact analysis with respect to construction worker doses as discussed in Section 4.5 (Radiation Exposure to Construction Workers) of NUREG-1555.